IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Original): An image binarization apparatus comprising:

a block division unit which divides a multi-valued image into blocks;

a luminance value output unit which outputs a luminance value of each pixel forming the multi-valued image;

a binarization threshold value setting unit which sets a binarization threshold value to be used when binarizing the multi-valued image;

a binarization unit which binarizes the multi-valued image based on the binarization threshold value;

a low luminance threshold value setting unit which sets a low luminance threshold value to be used when removing low luminance values;

an object block selection unit which selects object blocks whose multi-valued images are to be binarized by said binarization unit from among the blocks created by said block division unit;

a low luminance value removal unit which inputs luminance values of each pixel forming the object blocks selected by said object block selection unit from among luminance values output by said luminance value output unit, removes luminance values that are lower than the low luminance threshold value set by said low luminance threshold value setting unit, and outputs only those luminance values which exceed the low luminance

threshold value; and

a mean luminance value calculation unit which calculates a mean luminance value of the luminance values output by said low luminance value removal unit,

wherein said low luminance threshold value setting unit sets the low luminance threshold value based on mean luminance values of blocks adjacent to the object blocks; and

said binarization threshold value setting unit sets the binarization threshold values of the object blocks based on mean luminance values of the blocks.

Claim 2 (Original): The image binarization apparatus according to claim 1, wherein said block division unit changes the size of created blocks in accordance with the image size of the multi-valued image or with the total number of pixels of the multi-valued image.

Claim 3 (Original): The image binarization apparatus according to claim 1, wherein said block division unit changes the size or shape of blocks to be created in accordance with the positions of blocks to be created within the multi-valued image.

Claim 4 (Previously Presented): The image binarization apparatus according to claim 1 further comprising a sampling unit which samples pixels which form the multi-valued image,

wherein said luminance value output unit outputs luminance values of pixels sampled by said sampling unit.

Claim 5 (Original): The image binarization apparatus according to claim 4,

wherein said sampling unit sets a sampling interval used in the sampling in accordance with the image size, the total number of pixels, or the block size.

Claim 6 (Original): The image binarization apparatus according to claim 1, wherein said mean luminance value calculation unit comprises an adding unit which adds the luminance values of each pixel; and a counting unit which counts the number of pixels added by the adding unit, and

when the number of pixels counted by said counting unit is a power of two, said adding unit determines a mean luminance value.

Claim 7 (Original): An image binarization apparatus comprising:

a block division unit which divides a multi-valued image into blocks;

a luminance value output unit which outputs a luminance value of each pixel forming the multi-valued image;

a binarization threshold value setting unit which sets a binarization threshold value to be used when binarizing the multi-valued image;

a binarization unit which binarizes the multi-valued image based on the binarization threshold value;

a low luminance threshold value setting unit which sets a low luminance threshold value to be used when removing low luminance values;

an object block selection unit which selects object blocks to be processed from among the blocks created by said block division unit;

a low luminance value removal unit which inputs luminance values of each pixel forming the object blocks selected by said object block selection unit from among luminance values output by said luminance value output unit, removes luminance values that are lower than the low luminance threshold value set by said low luminance threshold value setting unit, and outputs only those luminance values which exceed the low luminance threshold value;

a mean luminance value calculation unit which calculates a mean luminance value of the luminance values output by said low luminance value removal unit;

a block binarization threshold value setting unit which sets a block binarization threshold value which is a binarization threshold value applied to the object blocks based on the mean luminance values calculated by said mean luminance value calculation unit; and

an interpolation block setting unit for setting interpolation blocks which cover pixels extending over two or more adjacent object blocks from among object blocks selected by said object block selection unit,

wherein said low luminance threshold value setting unit sets the low luminance threshold value based on mean luminance values of blocks adjacent to the object blocks; and

said binarization threshold value setting unit sets the binarization threshold value to be applied to pixels inside the interpolation block based on block binarization threshold values of each of the two or more object blocks bridged by the interpolation block.

Claim 8 (Original): The image binarization apparatus according to claim 7, wherein said block division unit changes the size of created blocks in accordance with the image size of the multi-valued image or with the total number of pixels of the multi-valued image.

Claim 9 (Original): The image binarization apparatus according to claim 7, wherein said block division unit changes the size or shape of blocks to be created in accordance with the positions of blocks to be created within the multi-valued image.

Claim 10 (Previously Presented): The image binarization apparatus according to claim 7 further comprising a sampling unit which samples pixels which form the multi-valued image,

wherein said luminance value output unit outputs luminance values of pixels sampled by said sampling unit.

Claim 11 (Original): The image binarization apparatus according to claim 10, wherein said sampling unit sets a sampling interval used in the sampling in accordance with the image size, the total number of pixels, or the block size.

Claim 12 (Original): The image binarization apparatus according to claim 7, wherein said mean luminance value calculation unit comprises an adding unit which adds the luminance values of each pixel; and a counting unit which counts the number of pixels added by the adding unit, and

when the number of pixels counted by said counting unit is a power of two, said adding unit determines a mean luminance value.

Claim 13 (Original): An image binarization apparatus comprising:

a block division unit which divides a multi-valued image into blocks;

a luminance value output unit which outputs a luminance value of each pixel forming the multi-valued image;

a binarization threshold value setting unit which sets a binarization threshold value to be used when binarizing the multi-valued image;

a binarization unit which binarizes the multi-valued image based on the binarization threshold value;

an object block selection unit which selects from among the blocks created by said block division unit object blocks whose multi-valued images are to be binarized by said binarization unit;

a mean luminance value calculation unit which receives luminance values of each pixel forming the object blocks selected by said object block selection unit from among

luminance values output by said luminance value output unit, and calculates mean luminance values of the object blocks; and

a luminance value limiting unit which limits a range of mean luminance values calculated by said mean luminance value calculation unit so that the values are within a predetermined spread,

wherein said binarization threshold value setting unit sets binarization threshold values of the object blocks based on the mean luminance values the range of which is limited by said luminance value limiting unit.

Claim 14 (Original): The image binarization apparatus according to claim 13, wherein said block division unit changes the size of created blocks in accordance with the image size of the multi-valued image or with the total number of pixels of the multi-valued image.

Claim 15 (Original): The image binarization apparatus according to claim 13, wherein said block division unit changes the size or shape of blocks to be created in accordance with the positions of blocks to be created within the multi-valued image.

Claim 16 (Previously Presented): The image binarization apparatus according to claim 13 further comprising a sampling unit which samples pixels which form the multi-valued image,

wherein said luminance value output unit outputs luminance values of pixels sampled by said sampling unit.

Claim 17 (Original): The image binarization apparatus according to claim 16,

wherein said sampling unit sets a sampling interval used in the sampling in accordance with the image size, the total number of pixels, or the block size.

Claim 18 (Original): The image binarization apparatus according to claim 13, wherein said mean luminance value calculation unit comprises an adding unit which adds the luminance values of each pixel; and a counting unit which counts the number of pixels added by the adding unit, and

when the number of pixels counted by said counting unit is a power of two, said adding unit determines a mean luminance value.

Claim 19 (Original): An image binarization apparatus comprising:

a block division unit which divides a multi-valued image into blocks;

a luminance value output unit which outputs a luminance value of each pixel forming the multi-valued image;

binarization threshold value setting unit which sets a binarization threshold value to be used when binarizing the multi-valued image;

a binarization unit which binarizes the multi-valued image based on the binarization threshold value;

an object block selection unit which selects object blocks to be processed from among the blocks created by said block division unit;

a mean luminance value calculation unit which receives luminance values of each pixel forming the object blocks selected by said object block selection unit from among luminance values output by said luminance value output unit, and calculates mean luminance values of the object blocks;

a luminance value limiting unit which limits a range of the mean luminance values calculated by said mean luminance value calculation unit so that the values are within a predetermined spread;

a block binarization threshold value setting unit which sets a block binarization threshold value which is a binarization threshold value applied to the object blocks based on the mean luminance values calculated by said mean luminance value calculation unit; and

an interpolation block setting unit which sets interpolation blocks which cover pixels extending over two or more adjacent object blocks from among object blocks selected by said object block selection unit,

wherein said binarization threshold value setting unit sets binarization threshold values applied to pixels inside the interpolation block based on block binarization threshold values of each of the two or more object blocks bridged by the interpolation block.

Claim 20 (Original): The image binarization apparatus according to claim 19, wherein said block division unit changes the size of created blocks in accordance with the image size of the multi-valued image or with the total number of pixels of the multi-valued image.

Claim 21 (Original): The image binarization apparatus according to claim 19, wherein said block division unit changes the size or shape of blocks to be created in accordance with the positions of blocks to be created within the multi-valued image.

Claim 22 (Previously Presented): The image binarization apparatus according to claim 19 further comprises a sampling unit which samples pixels which form the multi-valued image,

wherein said luminance value output unit outputs luminance values of pixels sampled by said sampling unit.

Claim 23 (Original): The image binarization apparatus according to claim 22,

wherein said sampling unit sets a sampling interval used in the sampling in accordance with the image size, the total number of pixels, or the block size.

Claim 24 (Original): The image binarization apparatus according to claim 19, wherein said mean luminance value calculation unit comprises an adding unit which adds the luminance values of each pixel; and a counting unit which counts the number of pixels added by the adding unit, and

when the number of pixels counted by said counting unit is a power of two, said adding unit determines a mean luminance value.

Claims 25-26 (Canceled).

Claim 27 (Previously Presented): An image pickup apparatus comprising:

an image pickup unit which picks up an image of an object of a photograph;

a screen division unit which divides the photographed object into a plurality of screens;

a photometry unit which measures light of screens created by said screen division unit;

a block division unit which divides a multi-valued image picked up by said image pickup unit into blocks;

a binarization threshold value setting unit which sets binarization threshold values used when binarizing the multi-valued image;

a binarization unit which binarizes a multi-valued image based on the binarization threshold values;

a photometric value smoothing unit which smoothes the photometric values measured by said photometry unit; and

an interpolation block setting unit which sets interpolation blocks which cover an image area extending over two or more adjacent screens from among the screens created by said screen division unit,

wherein said binarization threshold value setting unit sets binarization threshold values applied to pixels of the interpolation blocks based on smoothed photometric values of each of the two or more screens bridged by the interpolation blocks.

Claim 28 (Original): The image pickup apparatus according to claim 27, wherein screens created by said screen division unit are identical to blocks created by said block division unit.

Claim 29 (Previously Presented): An image pickup apparatus comprising:

an image pickup unit which picks up an image of an object of a photograph;

a screen division unit which divides the photographed object into a plurality of screens;

a photometry unit which measures light of screens created by said screen division unit;

a block division unit which divides a multi-valued image picked up by said image pickup unit into blocks;

a binarization threshold value setting unit which sets binarization threshold values used when binarizing the multi-valued image;

a binarization unit which binarizes a multi-valued image based on the binarization threshold values; and

a photometric value limiting unit which limits a spread of photometric values measured by said photometry unit so that the values are within a predetermined range,

wherein said binarization threshold value setting unit sets binarization threshold values of blocks created by said block division unit based on photometric values the range of which has been limited by said photometric value limiting unit.

Claim 30 (Original): The image pickup apparatus according to claim 29, wherein screens created by said screen division unit are identical to blocks created by said block division unit.

Claim 31 (Previously Presented): An image pickup apparatus comprising:

an image pickup unit which picks up an image of an object of a photograph;

a screen division unit which divides the object being photographed into a plurality of screens;

a photometry unit which measures light of screens created by said screen division unit;

a block division unit which divides a multi-valued image picked up by said image pickup unit into blocks;

a binarization threshold value setting unit which sets binarization threshold values used when binarizing the multi-valued image;

a binarization unit which binarizes a multi-valued image based on the binarization threshold values;

a photometric value limiting unit which limits a spread of photometric values measured by said photometry unit so that the values are within a predetermined range; and

an interpolation block setting unit which sets interpolation blocks which cover an image area extending over two or more adjacent screens from among the screens created by said screen division unit,

wherein said binarization threshold value setting unit sets binarization threshold values to be applied to pixels within the interpolation blocks based on photometric values the range of each of which has been limited of the two or more screens bridged by the interpolation block.

Claim 32 (Original): The image pickup apparatus according to claim 31, wherein screens created by said screen division unit are identical to blocks created by said block division unit.

Claim 33 (Original): An image binarization method for performing binarization processing on a multi-valued image comprising:

a block division step in which the multi-valued image is divided into blocks;

an object block selection step in which object blocks to be processed are selected from among the blocks created in the block division step;

a low luminance threshold value setting step in which a low luminance threshold value to be used when removing low luminance values is set based on mean luminance values of blocks adjacent to the object blocks;

a low luminance value removal step in which luminance values below the low luminance threshold value are removed from among luminance values of pixels contained in the object blocks selected in the object block selection step and only luminance values which exceed the low luminance threshold value are output;

a mean luminance value calculation step in which luminance values output in the low luminance value removal step are input and mean luminance values of the object blocks are calculated;

a binarization threshold value setting step in which binarization threshold values to be used in binarization processing of the object blocks are set based on mean luminance values of the object blocks calculated in the mean luminance value calculation step; and

a binarization step in which each pixel within the object blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 34 (Original): The image binarization method according to claim 33, wherein, in the block division step, the size of an object block is changed in accordance with the image size of the multi-valued image or with the total number of pixels of the multi-valued image.

Claim 35 (Original): The image binarization method according to claim 33, wherein, in the block division step, the size or shape of blocks to be created is changed in accordance with the positions of blocks to be created within the multi-valued image.

Claim 36 (Previously Presented): The image binarization method according to claim 35 further comprising a sampling step for sampling pixels which form the multi-valued image, and

in the low luminance value removal step, using pixels sampled in the sampling step, luminance values below the low luminance threshold value are removed from luminance values of the pixels and only luminance values which exceed the threshold luminance value are output.

Claim 37 (Original): The image binarization method according to claim 36, wherein, in the sampling step, a sampling interval used in the sampling is set in accordance with the image size, the total number of pixels, or the block size.

Claim 38 (Original): An image binarization method for performing binarization processing on a multi-valued image comprising:

a block division step in which the multi-valued image is divided into blocks;

an object block selection step in which object blocks to be processed are selected from among the blocks created in the block division step;

a low luminance threshold value setting step in which a low luminance threshold value to be used when removing low luminance values is set based on mean luminance values of blocks adjacent to the object blocks;

a low luminance value removal step in which luminance values below the low luminance threshold value are removed from among luminance values of pixels contained in the object blocks selected in the object block selection step and only luminance values which exceed the low luminance threshold value are output;

a mean luminance value calculation step in which luminance values output in the low luminance value removal step are input and mean luminance values of the object blocks are calculated;

a block binarization threshold value setting step in which a block binarization threshold value which is a binarization threshold value applied to an object block is set based on a mean luminance value calculated in the mean luminance value calculation step;

an interpolation block setting step in which interpolation blocks which cover pixels extending over two or more adjacent object blocks are set from among object blocks selected in the object block selection step;

a binarization threshold value setting step in which binarization threshold values to be applied to pixels within the interpolation blocks are set based on each block binarization threshold value of the two or more object blocks bridged by the interpolation block set in the interpolation block setting step; and

a binarization step in which each pixel within the object blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 39 (Original): The image binarization method according to claim 38, wherein, in the block division step, the size of an object block is changed in accordance with the image size of the multi-valued image or with the total number of pixels of the multi-valued image.

Claim 40 (Original): The image binarization method according to claim 38, wherein, in the block division step, the size or shape of blocks to be created is changed in accordance with the positions of blocks to be created within the multi-valued image.

Claim 41 (Previously Presented): The image binarization method according to claim 38 further comprising a sampling step for sampling pixels which form the multi-valued image, and

in the low luminance value removal step, using pixels sampled in the sampling step, luminance values below the low luminance threshold value are removed from luminance values of the pixels and only luminance values which exceed the threshold luminance value are output.

Claim 42 (Original): The image binarization method according to claim 41, wherein, in the sampling step, a sampling interval used in the sampling is set in accordance with the image size, the total number of pixels, or the block size.

Claim 43 (Previously Presented): An image binarization method for performing binarization processing on a multi-valued image comprising:

a block division step in which the multi-valued image is divided into blocks;

an object block selection step in which object blocks to be processed are selected from among the blocks created in the block division step;

a mean luminance value calculation step in which mean luminance values of object blocks selected in the object block selection step are calculated;

a luminance value limiting step in which a spread of mean luminance values calculated in the mean luminance value calculation step is limited so that the values are within a predetermined range;

a binarization threshold value setting step in which a binarization threshold value to be used in binarization processing of the object block is set based on mean luminance values the range of which has been limited in the luminance value limiting step; and

a binarization step in which each pixel within the object blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 44 (Original): The image binarization method according to claim 43, wherein, in the block division step, the size of an object block is changed in accordance with the image size of the multi-valued image or with the total number of pixels of the multi-valued image.

Claim 45 (Original): The image binarization method according to claim 43, wherein, in the block division step, the size or shape of blocks to be created is changed in accordance with the positions of blocks to be created within the multi-valued image.

Claim 46 (Previously Presented): The image binarization method according to claim 43, wherein the image binarization method further comprises a sampling step for sampling pixels which form the multi-valued image, and in the mean luminance value calculation step, mean luminance values are calculated using pixels sampled in the sampling step.

Claim 47 (Original): The image binarization method according to claim 46, wherein, in the sampling step, a sampling interval used in the sampling is set in accordance with the image size, the total number of pixels, or the block size.

Claim 48 (Original): An image binarization method for performing binarization processing on a multi-valued image comprising:

a block division step in which the multi-valued image is divided into blocks;

an object block selection step in which object blocks to be processed are selected from among the blocks created in the block division step;

a mean luminance value calculation step in which mean luminance values of object blocks selected in the object block selection step are calculated;

a luminance value limiting step in which a spread of mean luminance values calculated in the mean luminance value calculation step is limited so that the values are within a predetermined range;

a block binarization threshold value setting step in which a block binarization threshold value which is a binarization threshold value applied to the object block is set based on mean luminance values the range of which has been limited in the mean luminance value limiting step;

an interpolation block setting step in which interpolation blocks which share pixels extending over two or more adjacent object blocks are set from among object blocks selected in the object block selection step;

a binarization threshold value setting step in which binarization threshold values to be applied to pixels within the interpolation blocks are set based on each block binarization threshold value of the two or more object blocks bridged by the interpolation block set in the interpolation block setting step; and

a binarization step in which each pixel within the object blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 49 (Original): The image binarization method according to claim 48, wherein, in the block division step, the size of an object block is changed in accordance with the image size of the multi-valued image or with the total number of pixels of the multi-valued image.

Claim 50 (Original): The image binarization method according to claim 48, wherein, in the block division step, the size or shape of blocks to be created is changed in accordance with the positions of blocks to be created within the multi-valued image.

Claim 51 (Previously Presented): The image binarization method according to claim 48, wherein the image binarization method further comprises a sampling step for sampling pixels which form the multi-valued image, and in the mean luminance value calculation step, mean luminance values are calculated using pixels sampled in the sampling step.

Claim 52 (Original): The image binarization method according to claim 48,

wherein, in the sampling step, a sampling interval used in the sampling is set in accordance with the image size, the total number of pixels, or the block size.

Claims 53-54 (Canceled).

Claim 55 (Original): An image pickup method for performing binarization processing on a multi-valued image comprising:

a screen division step in which an object of a photograph is divided into a plurality of screens;

a photometry step in which light of screens created in the screen division step is measured;

an image pickup step in which an image of the object of the photograph is picked up;

a block division step in which a multi-valued image which was picked up in the image pickup step is divided into blocks;

a photometric value smoothing step in which photometric values measured in the photometry step are smoothed;

an interpolation block setting step in which interpolation blocks which cover an image area extending over two or more adjacent screens are set from among the screens created in the screen division step;

a binarization threshold value setting step in which binarization threshold values applied to pixels within the interpolation blocks are set based on smoothed photometric values of each of the two or more screens bridged by the interpolation blocks set in the interpolation block setting step; and

a binarization step in which each pixel in the interpolation blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 56 (Original): The image pickup method according to claim 55, wherein screens created in the screen division step are identical to blocks created in the block division step.

Claim 57 (Original): An image pickup method for performing binarization processing on a multi-valued image comprising:

a screen division step in which an object of a photograph is divided into a plurality of screens;

a photometry step in which light of screens created in the screen division step is measured;

an image pickup step in which an image of the object of the photograph is picked up;

a block division step in which a multi-valued image which was picked up in the image pickup step is divided into blocks;

an object block selection step in which object blocks to be processed are selected from among blocks created in the block division step;

a photometric value limiting step in which the spread of photometric values measured in the photometry step is limited so that the values are within a predetermined range;

a binarization threshold value setting step in which binarization threshold values of object blocks are set based on photometric values whose range has been limited in the photometric value limiting step; and

a binarization step in which each pixel in the object blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 58 (Original): The image pickup method according to claim 57, wherein screens created in the screen division step are identical to blocks created in the block division step.

Claim 59 (Original): An image pickup method for performing binarization processing on a multi-valued image comprising:

a screen division step in which an object of a photograph is divided into a plurality of screens;

a photometry step in which light of screens created in the screen division step is measured;

an image pickup step in which an image of the object of the photograph is picked up;

a block division step in which a multi-valued image which was picked up in the image pickup step is divided into blocks;

a photometric value limiting step in which the spread of photometric values measured in the photometry step is limited so that the values are within a predetermined range;

an interpolation block setting step in which interpolation blocks which cover an image area extending over two or more adjacent screens are set from among the screens created in the screen division step;

a binarization threshold value setting step in which binarization threshold values applied to pixels within the interpolation blocks are set based on photometric values the range of each of which has been limited of the two or more screens bridged by the interpolation blocks set in the interpolation block setting step; and

a binarization step in which each pixel in the interpolation blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 60 (Original): The image pickup method according to claim 59, wherein screens created in the screen division step are identical to blocks created in the block division step.

Claim 61 (Original): A computer readable medium for storing instructions, which when executed by a computer, causes the computer to perform an image binarization method comprising:

a block division step in which the multi-valued image is divided into blocks;

an object block selection step in which object blocks to be processed are selected from among the blocks created in the block division step;

a low luminance threshold value setting step in which a low luminance threshold value to be used when removing low luminance values is set based on mean luminance values of blocks adjacent to the object blocks;

a low luminance value removal step in which luminance values below the low luminance threshold value are removed from among luminance values of pixels contained in the object blocks selected in the object block selection step and only luminance values which exceed the low luminance threshold value are output;

a mean luminance value calculation step in which luminance values output in the low luminance value removal step are input and mean luminance values of the object blocks are calculated;

a binarization threshold value setting step in which binarization threshold values to be used in binarization processing of the object blocks are set based on mean luminance values of the object blocks calculated in the mean luminance value calculation step; and

a binarization step in which each pixel within the object blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 62 (Original): A computer readable medium for storing instructions, which when executed by a computer, causes the computer to perform an image binarization method comprising:

a block division step in which the multi-valued image is divided into blocks;

an object block selection step in which object blocks to be processed are selected from among the blocks created in the block division step;

a low luminance threshold value setting step in which a low luminance threshold value to be used when removing low luminance values is set based on mean luminance values of blocks adjacent to the object blocks;

a low luminance value removal step in which luminance values below the low luminance threshold value are removed from among luminance values of pixels contained in the object blocks selected in the object block selection step and only luminance values which exceed the low luminance threshold value are output;

a mean luminance value calculation step in which luminance values output in the low luminance value removal step are input and mean luminance values of the object blocks are calculated;

a block binarization threshold value setting step in which a block binarization threshold value which is a binarization threshold value applied to an object block is set based on a mean luminance value calculated in the mean luminance value calculation step;

an interpolation block setting step in which interpolation blocks which cover pixels extending over two or more adjacent object blocks are set from among object blocks selected in the object block selection step;

a binarization threshold value setting step in which binarization threshold values to be applied to pixels within the interpolation blocks are set based on each block binarization threshold value of the two or more object blocks bridged by the interpolation block set in the interpolation block setting step; and

a binarization step in which each pixel within the object blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 63 (Original): A computer readable medium for storing instructions, which when executed by a computer, causes the computer to perform an image binarization method comprising:

a block division step in which the multi-valued image is divided into blocks;

an object block selection step in which object blocks to be processed are selected from among the blocks created in the block division step;

a mean luminance value calculation step in which mean luminance values of object blocks selected in the object block selection step are calculated;

a luminance value limiting step in which a spread of mean luminance values calculated in the mean luminance value calculation step is limited so that the values are within a predetermined range;

a binarization threshold value setting step in which binarization threshold value to be used in binarization processing of the object block is set based on mean luminance values the range of which has been limited in the luminance value limiting step; and

a binarization step in which each pixel within the object blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 64 (Original): A computer readable medium for storing instructions, which when executed by a computer, causes the computer to perform an image binarization method comprising:

a block division step in which the multi-valued image is divided into blocks;

an object block selection step in which object blocks to be processed are selected from among the blocks created in the block division step;

a mean luminance value calculation step in which mean luminance values of object blocks selected in the object block selection step are calculated;

a luminance value limiting step in which a spread of mean luminance values calculated in the mean luminance value calculation step is limited so that the values are within a predetermined range;

a block binarization threshold value setting step in which a block binarization threshold value which is a binarization threshold value applied to the object block is set based on mean luminance values the range of which has been limited in the mean luminance value limiting step;

an interpolation block setting step in which interpolation blocks which share pixels extending over two or more adjacent object blocks are set from among object blocks selected in the object block selection step;

a binarization threshold value setting step in which binarization threshold values to be applied to pixels within the interpolation blocks are set based on each block binarization threshold value of the two or more object blocks bridged by the interpolation block set in the interpolation block setting step; and

a binarization step in which each pixel within the object blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 65 (Original): A computer readable medium for storing instructions, which when executed by a computer, causes the computer to perform an image pickup method comprising:

a screen division step in which an object of a photograph is divided into a plurality of screens;

a photometry step in which light of screens created in the screen division step is measured;

an image pickup step in which an image of the object of the photograph is picked up;

a block division step in which a multi-valued image which was picked up in the image pickup step is divided into blocks;

an object block selection step in which object blocks to be processed are selected from among blocks created in the block division step;

a photometric value smoothing step in which photometric values measured in the photometry step are smoothed;

a binarization threshold value setting step in which binarization threshold values of object blocks are set based on photometric values smoothed in the photometric value smoothing step; and

a binarization step in which each pixel in the object blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 66 (Original): A computer readable medium for storing instructions, which when executed by a computer, causes the computer to perform an image pickup method comprising:

a screen division step in which an object of a photograph is divided into a plurality of screens;

a photometry step in which light of screens created in the screen division step is measured;

an image pickup step in which an image of the object of the photograph is picked up;

a block division step in which a multi-valued image which was picked up in the image pickup step is divided into blocks;

a photometric value smoothing step in which photometric values measured in the photometry step are smoothed;

an interpolation block setting step in which interpolation blocks which cover an image area extending over two or more adjacent screens are set from among the screens created in the screen division step;

a binarization threshold value setting step in which binarization threshold values applied to pixels within the interpolation blocks are set based on smoothed photometric values of each of the two or more screens bridged by the interpolation blocks set in the interpolation block setting step; and

a binarization step in which each pixel in the interpolation blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 67 (Original): A computer readable medium for storing instructions, which when executed by a computer, causes the computer to perform an image pickup method comprising:

a screen division step in which an object of a photograph is divided into a plurality of screens;

a photometry step in which light of screens created in the screen division step is measured;

an image pickup step in which an image of the object of the photograph is picked up;

a block division step in which a multi-valued image which was picked up in the image pickup step is divided into blocks;

an object block selection step in which object blocks to be processed are selected from among blocks created in the block division step;

a photometric value limiting step in which the spread of photometric values measured in the photometry step is limited so that the values are within a predetermined range;

a binarization threshold value setting step in which binarization threshold values of object blocks are set based on photometric values whose range has been limited in the photometric value limiting step; and

a binarization step in which each pixel in the object blocks is binarized using binarization threshold values set in the binarization threshold value setting step.

Claim 68 (Original): computer readable medium for storing instructions, which when executed by a computer, causes the computer to perform an image pickup method comprising:

a screen division step in which an object of a photograph is divided into a plurality of screens;

a photometry step in which light of screens created in the screen division step is measured;

an image pickup step in which an image of the object of the photograph is picked up;

a block division step in which a multi-valued image which was picked up in the image pickup step is divided into blocks;

a photometric value limiting step in which the spread of photometric values measured in the photometry step is limited so that the values are within a predetermined range;

an interpolation block setting step in which interpolation blocks which cover an image area extending over two or more adjacent screens are set from among the screens created in the screen division step;

a binarization threshold value setting step in which binarization threshold values applied to pixels within the interpolation blocks are set based on photometric values the range of each of which has been limited of the two or more screens bridged by the interpolation blocks set in the interpolation block setting step; and

a binarization step in which each pixel in the interpolation blocks is binarized using binarization threshold values set in the binarization threshold value setting step.